Support information

Multi-stimuli Responsive Supramolecular Hydrogel Based on Fe^{3+} and Diblock Copolymer Micelles Complexation

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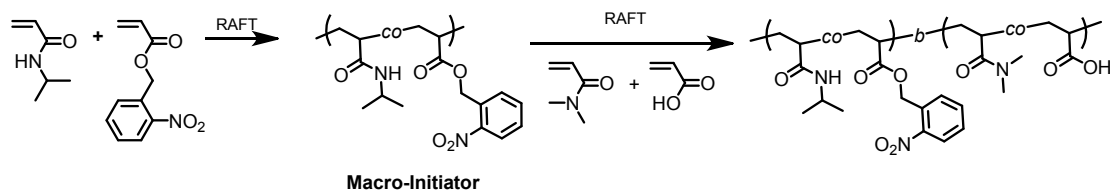
[*]corresponding author：Haiyang Yang

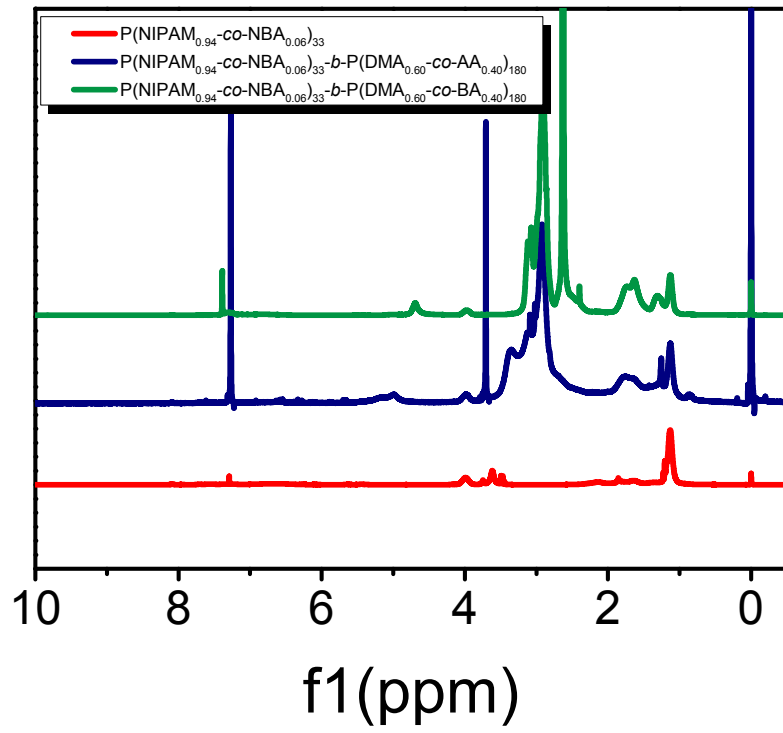**Figure S1.** Schematic presentation of synthesis of P1 diblock copolymer *via* RAFT Polymerization.

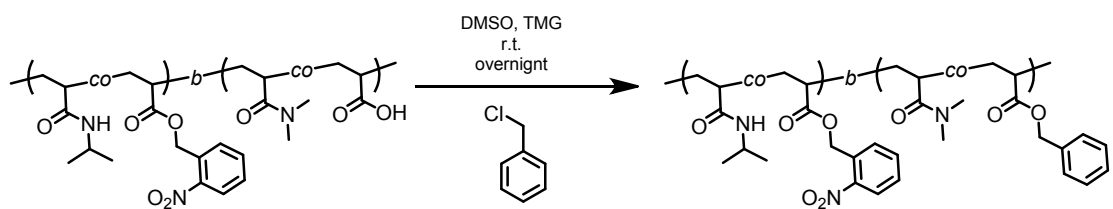**Figure S2.** ^{1}H-NMR spectra of P1 diblock copolymer.

Figure S3. Schematic presentation of conversion of P(DMA-*co*-AA) into P(DMA-*co*-BA) by esterification for determination of the length of P(DMA-*co*-AA) *via* ^{1}H-NMR.

Table S1. $<D_h>$ and PDI for each copolymer sample confirmed by DLS measurements.

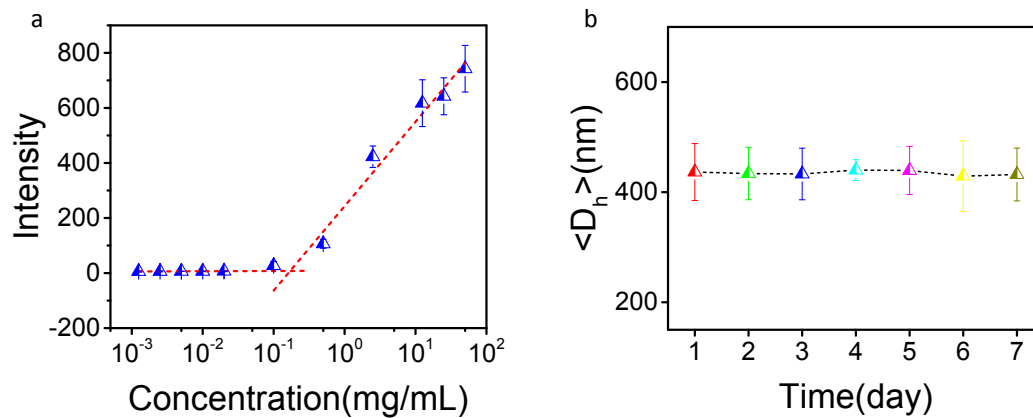| Entry	Polymer	$<D_h>$	PDI
P1	$P(DMA_{0.6}$-co-$AA_{0.4})_{180}$-b-$P(NIPAM_{0.94}$-co-$NBA_{0.06})_{33}$	425	0.14
P2	$P(DMA_{0.6}$-co-$AA_{0.4})_{180}$-b-$P(NIPAM_{0.94}$-co-$NBA_{0.06})_{69}$	344	0.13
P3	$P(DMA_{0.6}$-co-$AA_{0.4})_{180}$-b-$P(NIPAM_{0.94}$-co-$NBA_{0.06})_{109}$	180	0.15

Figure S4. CMC value (a) and micellar stability (b) of P1 determined by concentration- and time-dependent DLS measurements.
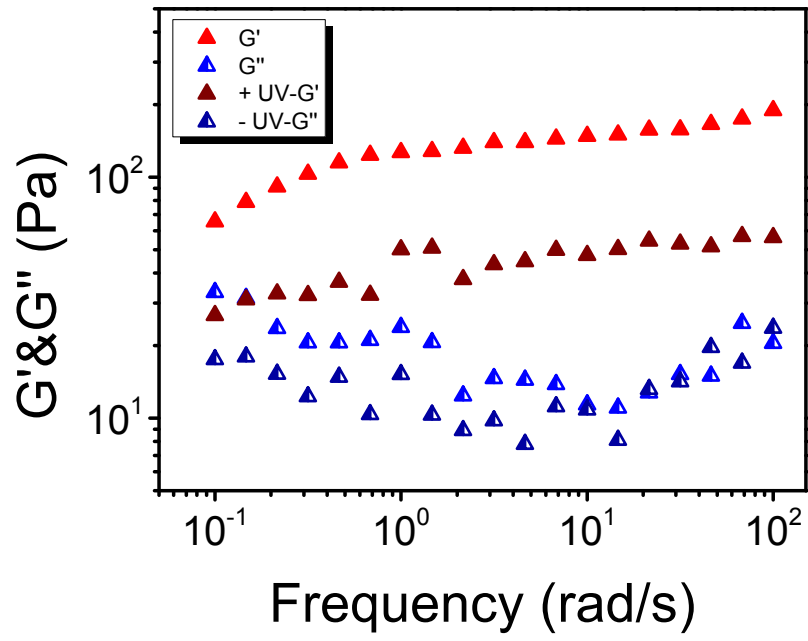
Figure S5. G' and G'' versus frequency of the copolymer hydrogel with polymer wt% at 15%.
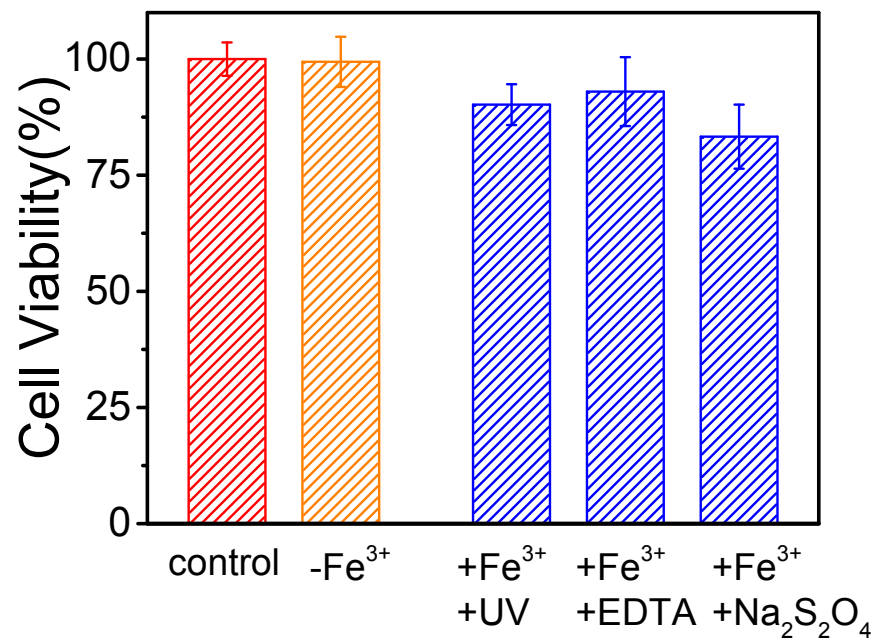
Figure S6. *In vitro* cytotoxicity evaluation before Complexation, after Complexation and degradation triggered by UV, EDTA and $Na_2S_2O_4$.